



Michigan Department of Agriculture  
Pesticide and Plant Pest Management Division  
PO Box 30017  
Lansing, MI 48909



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# Pesticide & Plant Pest Management Division

## Annual Report 2002

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**Kenneth Rauscher,**  
**Director**

***The mission of the  
Pesticide and Plant Pest Management Division is to:***

**Protect human health and the environment, while  
fostering a diverse, viable Michigan agriculture.**

## **INTRODUCTION**

This annual report is a reflection of the work of the dedicated staff of the Pesticide and Plant Pest Management Division. This staff, through their regulatory and outreach activities, touches the lives of every citizen of Michigan. Our attention to agricultural product quality assurance provides a safe food and feed supply and provides a level playing field for producers and industry. Our regulation and management of plant pests facilitates interstate and international trade and protects the livelihood of producers by excluding and eradicating invasive, exotic pests. The pesticide enforcement component of the division assures the availability of pest management tools while protecting the environment and human health. Finally the division's fruit and vegetable inspection responsibilities assure proper produce grading, facilitates trade and insures fair evaluation of fruit and vegetables for producers. We are proud to serve the citizens of Michigan in this vital role.



To better serve our constituents, industry and the general public, Pesticide and Plant Pest Management Division staff can be found in seven regional office locations throughout the state.

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Region #1	Escanaba	(906) 228-9998
Region #2	Traverse City	(231) 922-5210
Region #3	Grand Rapids	(616) 356-0600
Region #4	Saginaw	(517) 758-1778
Region #5	St. Joseph	(616) 428-2575
Region #6	Lansing	(517) 335-1830
Region #7	Southfield	(248) 356-1701

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# PPPM Table of Contents

<b>PESTICIDE SECTION .....</b>	<b>4</b>
Legislative Activity .....	4
Enforcement Activity .....	4
Use Investigations .....	5
Supplemental Environmental Projects .....	5
Pesticide Contacts .....	5
Producer Establishment Inspections .....	5
Federal Marketplace Inspections .....	5
Planned Use Inspections .....	6
Worker Protection Standards .....	6
Inspection / Compliance Monitoring .....	6
Certification Activities .....	6
Exams .....	7
Recertification Activities .....	7
Integrated Pest Management Activities .....	7
Community Pesticide Education Programs .....	7
Pesticide Registration .....	8
FIFRA Section 18 Exemptions .....	8
24(c) Registrations .....	8
Experimental Use Permits (EUPs) .....	8
Restricted Use Pesticides .....	8
Enforcement Actions .....	8
State Marketplace Inspections .....	8
Insect and Rodent Management Activities .....	8
Arbovirus Surveillance Program .....	8
West Nile Virus .....	9
Eastern Equine Encephalitis Surveillance .....	9
<b>PLANT INDUSTRY SECTION .....</b>	<b>10</b>
Fruit and Vegetable Inspection Programs .....	10
Shipping Point Inspections .....	10
Market Inspections .....	10
Process Inspections .....	10
Controlled Atmosphere Storage Licensing Program .....	10
Export Inspections .....	10
Wholesale Potato Dealer Licensing Program .....	11
Seed Potato Inspection .....	11
Dry Bean Inspection Program .....	11
Michigan Organic Products Program .....	11
Agricultural Products / Quality Assurance .....	12
Commercial Feed Program .....	12
Medicated Feeds .....	12
“Mad Cow Disease” Prevention .....	13
Chronic Wasting Disease .....	13
Annual Feed Contaminant Survey .....	13
Feed Manufacturing and Distribution Statistics .....	13
Animal Remedies .....	14
Elevator and Feed Mill Sanitation .....	15
Fertilizer and Liming Program .....	15

Registration/Licensing .....	15
Sampling .....	15
MDA Internet .....	15
Anhydrous Ammonia .....	15
Bulk Storage Program .....	16
Inspections and Enforcement .....	16
Bioterrorism and Biosecurity .....	16
Outreach .....	16
On-Farm Fertilizer Bulk Storage .....	16
Seed Program .....	17
Regulatory Activities .....	17
Rhizomania .....	18
Seed Count .....	18
Seed Certification .....	18
Plant Pest .....	18
Nursery Program .....	18
Interstate Certification .....	19
2001 Rose Evaluation Trials .....	19
Export Certification .....	19
U.S./Canada Greenhouse Certification Program .....	20
Christmas Tree Certification .....	20
Gypsy Moth Program .....	20
Cooperative Gypsy Moth Suppression Program .....	20
Education Project .....	21
Slow-the-Spread (STS) Project .....	21
Biological Control .....	21
Emerald Ash Borer Eradication .....	21
Survey .....	21
Communications and Outreach .....	22
Regulatory Activity .....	22
Plant Pest Survey Program .....	22
Wood-boring and Bark Beetle Survey .....	22
Chrysanthemum White Rust ( <i>Puccinia horiana</i> ) .....	22
Daylily Rust ( <i>Puccinia hemerocallis</i> ) .....	22
Dogwood Anthracnose ( <i>Discula destructiva</i> ) .....	22
Hemlock Woolly Adelgid ( <i>Adelges tsugae</i> ) .....	23
Meadow Fleabane ( <i>Inula britannica</i> ) .....	23
Japanese Cedar Long-Horned Beetle ( <i>Callidiellum rufipenne</i> ) .....	23
Pine Shoot Beetle ( <i>Tomicus piniperda</i> ) .....	23
Plant Pest Permit .....	23
Plum Pox Virus Sampling .....	24
Swede Midge ( <i>Contarinia nasturtii</i> ) .....	24
Sudden Oak Death ( <i>Phytophthora ramorum</i> ) .....	24
Plant Pathology Section .....	24
Scionwood .....	24
Blueberry Certification .....	25
Import Permits .....	25
Dry Bean Testing .....	25
Seed Corn Certification .....	25
Soybean Cyst Nematode ( <i>Heterodera glycines</i> ) .....	25
More information... ..	26

# PESTICIDE SECTION

## Legislative Activity

In FY'99, PPPMD staff convened a working committee to review the proposed amendments to Act 451, Part 83. The committee included representation from MDA, the structural pest control industry, EPA Region 5, the lawn service industry, League of Women Voters, Michigan Farm Bureau, Michigan Agri-Business, the right-of-way industry, aquatic plant control industry, mosquito control districts, and the Michigan Environmental Action Council. Throughout the process, the workgroup remained focused on making the law easier to understand by editing out unnecessary wordiness and adding additional regulatory language where necessary. The result was a 48 page bill introduced in the senate (Senate Bill 989) on December 13, 2001. The Governor signed these legislative amendments on June 5, 2002.

The following summary identifies the major changes to the law:

- Clarification that the distribution of pesticides within the state, including internet sales, is included under the regulatory authority of the act, in addition to the marketing and selling of pesticides.
- A "truth in labeling" provision making it illegal to represent that a pesticide application has characteristics, benefits, or qualities that it does not have or that it may be used on a site for which it is not labeled
- Clarification of the responsibility of a commercial applicator for a person applying pesticides under his or her supervision.
- A provision that the department will require a pesticide applicator to present their certification credential upon request.
- An increase in fees for registration of pesticide products (now \$40/yr), for commercial applicator certification (now \$75/3 years) or commercial registered technicians (now \$45/3 years), and for licensing applicator businesses (now \$100/yr) and restricted use pesticide dealers (now \$100/yr).
- Clarification of MDA's authority to conduct inspections and investigations to ensure that pesticides are only used in compliance with the law.

With the exception of licensing and certification fees, these new requirements became effective immediately. The new licensing and certification fees were implemented on October 1, 2002 to coincide with distribution of applicator and business license renewal applications.

The rulemaking process for Regulation 636 was also

completed in FY'02 using the same legislative workgroup described above. Generally, the amendments adopt many practices already in place that will facilitate the pesticide applicator certification process and maintain programs like the recertification by seminar program.

The major changes to Regulation 636 are as follows:

- Reducing the applicator certification or registration application period from 12 months to 6 months to allow for more timely closure of pending applications. The life of an active credential will remain 3 years.
- Adding certification categories for small animal pest management (category 7G) and sewer line root control (category 5C), rescinding the category for contractual public health pest management (category 7C) and combining fumigation standards.
- Development of guidelines for verification of an applicators 2-week exemption for training.
- Elimination of Rule 10, which provided special provisions for restricted use pesticide applications by registered applicators.
- Recordkeeping will now require commercial applicators to record the EPA registration number for general and restricted use pesticides.

## Enforcement Activity

The enforcement program oversees all inspection and investigation activities for the pesticide section. These activities include conducting pesticide use/misuse investigations, inspecting pesticide producing establishments and pesticide marketplace locations, auditing of restricted use pesticide (RUP) dealer sales and commercial applicator records, addressing pesticide use violations related to food safety and farm worker protection and implementing federal and state targeted compliance monitoring initiatives.

Other enforcement activities include marketplace surveillance for unregistered pesticides and proper pesticide labeling, contacts with applicators and RUP dealers to assure compliance with certification and licensing requirements, and special projects like the federal Urban Initiative.

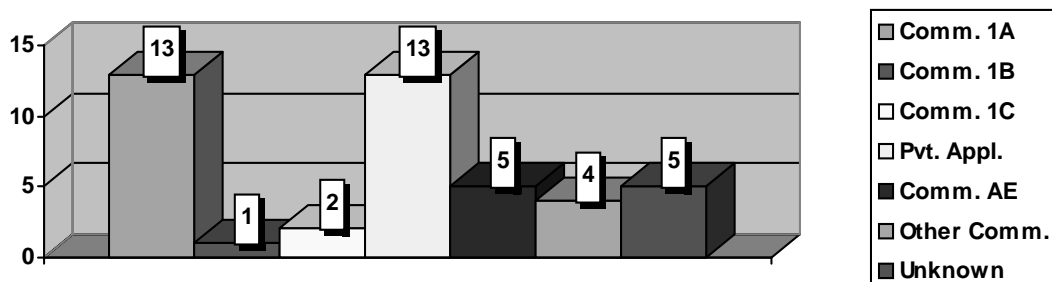
In FY'02, enforcement activities continued to address significant issues of pesticide misuse in the urban environment, including use of agricultural pesticides to control urban pests and uncertified or unlicensed commercial pesticide applicators.

## Pesticide and Plant Pest Management Division

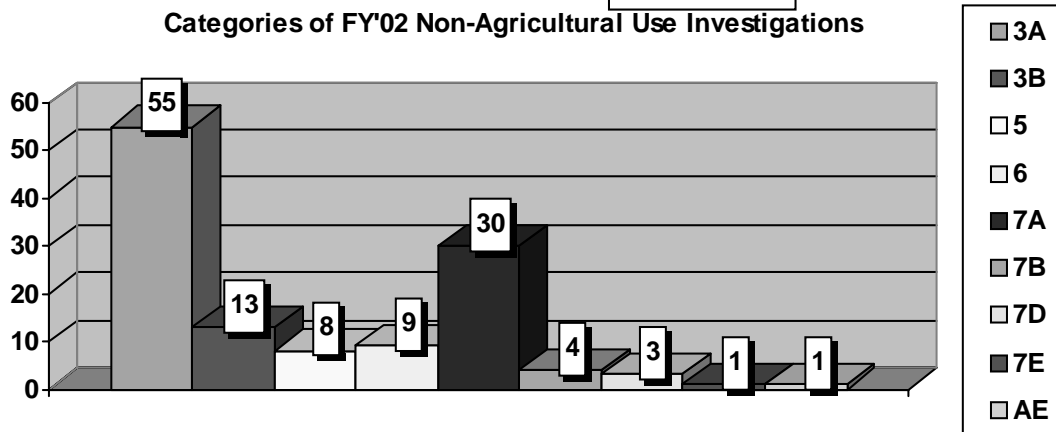
### Use Investigations

PPPMD staff conducted 165 Pesticide Use Investigations (UIs) in FY'01, 39 of which occurred in agricultural situations and 126 in non-agricultural situations.

**FY'02 Agricultural Use Investigations**



**Categories of FY'02 Non-Agricultural Use Investigations**



### Supplemental Environmental Projects

Several firms found to be in violation of state pesticide use regulations voluntarily chose to sponsor supplemental environmental projects as part of their civil penalty. The following projects were sponsored as a result of penalties assessed during use investigations.

\$500 was directed to the Michigan Agricultural Aviation Association, who utilized the funds to sponsor aerial pesticide applicator training programs consisting of two parts – calibration of aircraft in the spring and technical and regulatory discussions in the fall.

\$500 was directed to the Kalamazoo County Nature Center to assist its volunteers with the collection of wild migratory bird blood samples to detect St. Louis Encephalitis, Eastern Equine Encephalitis, and West Nile Virus.

contacts include targeted inspections of specific pesticide use activities, road check inspections, informational contacts, compliance assistance and outreach, and monitoring for compliance with state regulatory requirements. Some contacts contain specific orders to stop prohibited conduct such as failure to renew the firm's commercial pesticide applicator license.

### Producer Establishment Inspections

PPPMD staff conducted fifty-five Pesticide Producer Establishment Inspections (PEIs) in FY'02. Twenty-four inspections were conducted at bulk repackagers. Sixteen inspections specifically included WPS product label reviews for a total of 58 pesticide product label reviews. Eleven inspections specifically targeted antimicrobial pesticide product label for a total of 28 different documentary samples collected for label reviews and collected 5 formulation samples for analysis.

### Pesticide Contacts

One thousand seventy-seven pesticide contacts were conducted in FY' 02. These focused inspections or

### Federal Marketplace Inspections

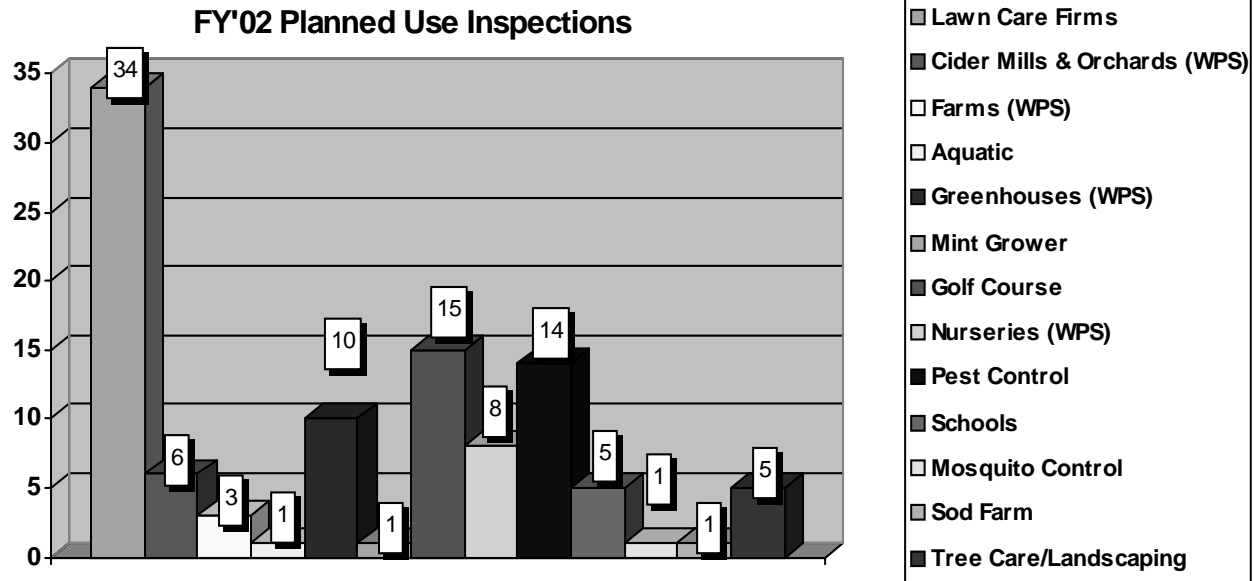
PPPMD staff conducted twenty-five federal Marketplace Inspections (MPIs). Seven specific inspections were conducted focusing on antimicrobial products with 5



formulation samples collected. These inspections included a total of 16 different antimicrobial documentary samples collected for product label reviews. One WPS inspection reviewed four product labels.

## Planned Use Inspections

One hundred four Planned Use Inspections (PUIs) were conducted in FY'01; 32 were conducted at agricultural



## Worker Protection Standards

### Inspection / Compliance Monitoring

PPPM continues to work within the framework of the State Implementation Plan for WPS. The plan contains Michigan's strategy for development of cooperative relationships and compliance monitoring. The implementation plan was revised in FY'99 to accurately reflect all WPS activities conducted by PPPM. PPPMD staff continue to provide WPS compliance assistance, but with more emphasis on WPS enforcement.

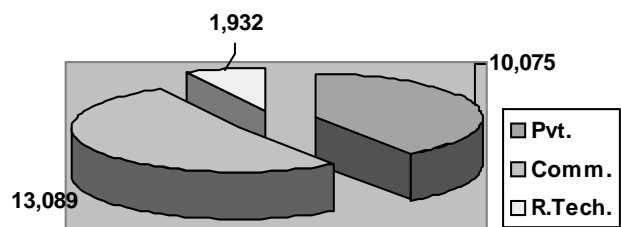
In FY '02, MDA participated or conducted 5 WPS outreach activities including WPS presentations, approved trainer programs, and display booth exhibits. Outreach activities are essential to reach the diverse groups impacted by the WPS or who are interested in learning about the WPS. These activities were sponsored or coordinated by MDA, MSU Extension Service, farm organizations, and commodity groups. The MDA reached about 500 individuals through these activities.

In September of 2002, EPA conducted an audit of MDA WPS inspection programs. At this time, EPA has only provided preliminary findings, but several MDA activities have been implemented in response. First, based on an MDA assessment (in preparation for the audit) any WPS contact, inspection or investigation without documented closure to violations will be addressed. MDA regional staff

are currently contacting and reporting these activities to insure compliance. Second, the electronic inspection system used to collect inspection information has been reviewed and will be part of the upcoming system redesign. Finally, MDA staff training and program planning will insure that complete inspections are conducted. This may require several site inspections and contacts to document issues, interview workers, and insure compliance and enforcement work is concluded. MDA awaits EPA's draft audit report.

## Certification Activities

Currently there are over 25,000 pesticide applicators who are either certified or registered in Michigan. The chart below illustrates the number of pesticide applicators by type.



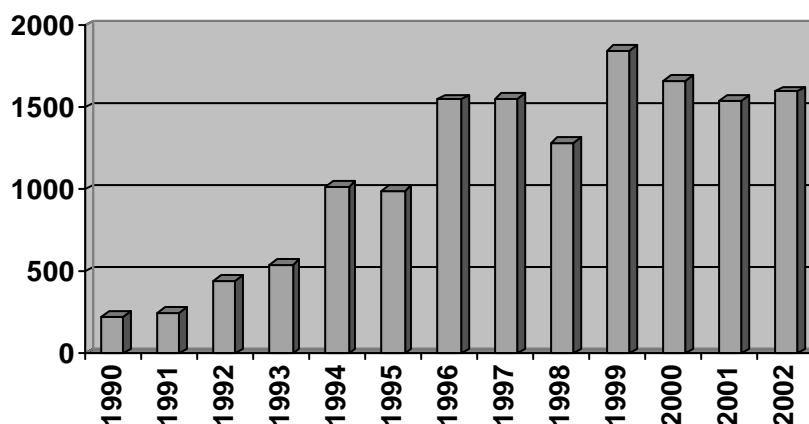
## Pesticide and Plant Pest Management Division

### Exams

A total of 13,881 pesticide applicator exams were administered to private, commercial and registered applicators throughout the state in FY'02. This figure represents both initial exams administered to applicants becoming certified/registered for the first time and renewal exams administered to applicants renewing their credentials. It includes repeated exam attempts. The exam numbers by applicator type are as follows: Private (2,2345), Commercial (10,884), and Registered Technician (763). These exams were administered during 319 regional office exam sessions and 149 non-regional office exam sessions i.e. extension offices, private firms, etc.

### Recertification Activities

Seven hundred fifty-four seminars were approved for recertification credits in FY'02. The following chart identifies the number of certified applicators that have renewed their certification credential by seminar credits each fiscal year since the program implementation. In FY'02, 1,597 applicators renewed their credentials in this manner.



### Integrated Pest Management Activities

The Natural Resources and Environmental Protection Act, Act 451, Part 83, as amended, and Regulation 637 set forth requirements for use of Integrated Pest Management (IPM) practices in schools, health care facilities and public buildings. These requirements include provisions for pesticide applicator attendance at an approved IPM training program and verifiable IPM programs for buildings.

To assist pesticide applicators with compliance, MDA and the Michigan Pest Control Association (MPCA) developed a joint IPM training program. In FY'02, this training program was offered at 7 locations throughout the state with a total of 211 people in attendance. Participants included representatives from health care facilities, schools, public buildings and the pest control industry.

### Community Pesticide Education Programs

The Community Pesticide Education Program (CPEP) is a comprehensive approach to reaching the public with educational information on legal pesticide use, handling

and disposal, risks associated with pesticide use, the basics of IPM, information on structural pests, and how to choose a pest control company. The program goal is to identify and establish a presence in Michigan urban communities that are vulnerable to the misuse of pesticides, and to develop and strengthen ties with community residents and associations, to promote integrated pest management and reduce the danger associated with the use and misuse of pesticides.

In FY'02, CPEP continued to work with community groups and conducted training on IPM techniques, how to conduct a home inspection, and proper monitoring techniques.

In FY'02 MDA hosted a Detroit area pesticide-training program to improve homeowner and/or resident education on pesticide misuse and integrated pest management techniques. It was also intended to encourage cooperation among governmental agencies, community service providers, pest control associations, private companies, and community leaders, on the issue of pesticide misuse and integrated pest management. A pesticide task force was developed to oversee pesticide education training and outreach activities in the City of Detroit. The program was made possible through EPA funding, passed through to Parents Together, a local community service group.



During FY'02, MDA conducted 74 inspections in urban areas. Of these inspections, 40 were use investigations, which resulted in 17 cases with enforcement action taken by MDA. MDA also conducted 18 state marketplace inspections in urban communities, to monitor for the presence of illegal, unregistered pesticides

## Pesticide Registration

### FIFRA Section 18 Exemptions

Section 18 of Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) allows states to request from EPA, the use of an unregistered pesticide to control an emergency pest problem within the state. When an emergency situation develops, a Michigan State University Extension specialist petitions MDA for a section 18 emergency exemption. MDA evaluates the situation to see if it meets section 18 criteria and if so, works with the extension specialist to develop the section 18 exemption request. In FY'02, PPPMD staff reviewed and prepared seventeen section 18 specific exemption requests for submission to EPA. Sixteen of the section 18 exemption requests were granted.

### 24(c) Registrations

Section 24(c) of FIFRA allows states to issue registrations for additional sites or changes in use patterns for federally registered pesticides as long as a special local need (SLN) exists. A SLN means a pest problem within the state for which MDA has determined that an appropriate federally registered pesticide product is not sufficiently available. MDA will not approve these registrations when registered alternatives exist or the residue data does not support the registration. PPPMD staff did not issue any 24(c) registrations in FY'02, however, three 24(c) requests were denied.

### Experimental Use Permits (EUPs)

Section 5 of FIFRA allows pesticide registrants to obtain a permit from EPA to do experimental trials in the states for which they would like to seek registration. MDA requires registrants to submit a summary of the experimental program as well as the names and locations of the cooperators within the state. PPPMD staff collected information on two experimental use permits for use during FY'02.

## Restricted Use Pesticides

PPPMD staff conducted sixty-seven Restricted Use Pesticide dealer audits in FY'02. Twenty-one enforcement actions were issued. In addition, PPPMD conducted 39 initial inventories of restricted use pesticides at dealer sites to facilitate audits in FY'03.

## Enforcement Actions

Enforcement Actions	#Dealers	% of Total
None	46	69%
Advisory Letter	1	1%
Warning Letter	5	7%
Informal Hearing	0	0%
Notice of Intent (Recommended)	11	16%
Referral to EPA	0	0%
Action Pending	4	6%
TOTAL	67	-----

## State Marketplace Inspections

The Inspector Application (IA) for Michigan's new Pesticide Registration Tracking System (PRTS) was released to the regional staff on January 8, 2001. The IA gives MDA inspectors electronic access to state and federal pesticide registration information. In addition, it allows inspectors to write product registration violation notices electronically which enables the violative products to be electronically monitored for registration. An additional feature of the PRTS IA is the creation of a unique status code to identify products that have been cancelled with no use of existing stocks (ex. chlorpyrifos homeowner products). The status code indicates to the inspector that the product cannot be registered and must be immediately removed from sale. MDA coded all chlorpyrifos products that can no longer be sold as "unregisterable products." This prepared the database for the state marketplace inspections conducted in fall of 2002.

MDA inspectors conducted 158 state marketplace inspections in FY'02, resulting in violation notices being issued to 217 registrants for 769 products. MDA registered 116 new products as a result of violation notices. Based upon the results of the inspections in FY'02, three out of 4 (75%) of all retailers had one or more products offered for sale which were not currently registered with the State of Michigan.

Three Notices of Intent (NOIs) totaling \$5,300 were issued to pesticide registrants for non-renewal of products.

## Insect and Rodent Management Activities

### Arbovirus Surveillance Program

MDA coordinated a group of 19 authors to revise the Michigan Mosquito Manual. The revised manual was completed in September 2002 and 3,000 copies were printed for distribution. The purpose of revising this document was centered around updating mosquito abatement options for community educational outreach,

## **Pesticide and Plant Pest Management Division**

with the focus on the proper use of pesticides and disease surveillance concerns associated with several Michigan mosquito arbovirus issues (West Nile Virus, Eastern Equine Encephalitis, St. Louis Encephalitis and California Group Encephalitis). Topics covered in this revision include:

- Mosquito Borne Diseases
- Mosquito Characteristics and Life Cycle
- Mosquito Surveys
- Mosquito Management Methods of Control
- Mosquito Borne Encephalitis Monitoring Program
- Encephalitis Surveillance Activities
- Risk Assessment and Risk Reduction Guide
- Camp Grounds and Public Access Sites of Mosquito Control Issues
- Local Community Outreach Efforts and Decision Making Coordination
- Private Applicators Concerns
- Professional Mosquito Applicators
- Arbovirus Surveillance in Animals
- Laboratory Screening Procedures for Arbovirus Activities in Michigan

(EEE) surveillance plan for their health jurisdiction. During the fall of 2001, a teenager from Livingston County died from EEE. As a result of this confirmed death, local residents wanted a proactive plan to prevent reoccurrence during the 2002 mosquito season. Livingston County Health Department increased its annual surveillance efforts for EEE by increasing mosquito collecting frequency and mosquito surveillance trapping location sites. Educational outreach efforts on mosquito borne encephalitis concerns increased through the development of pamphlets, community meetings, and media spots. MDA worked closely with the Livingston County Health Department as they implemented this plan over the summer months.

## **West Nile Virus**

Michigan has a working core group of individuals that meet regularly to recommend and determine West Nile Virus (WNV) surveillance strategies. This group developed recommendations for the mosquito season of 2002 with the primary goal of developing a realistic and effective disease control strategy for the detection and possible control of WNV. The Michigan WNV surveillance plan focused on human, horses, and dead bird confirmation of the disease with little focus on mosquitoes as a virus detection tool. WNV was detected in a dead crow on May 14, 2002 from the City of Livonia in Wayne County. By the end of this program year, WNV had been detected in dead birds from 73 of 83 counties, in over 342 horses, and in 644 humans. The human detection included 51 human deaths. The core group's plan, once WNV was detected during the 2002 mosquito season in Michigan, was centered on educational efforts to reduce human exposure to mosquito bites. This occurred in countless news releases by Michigan Department of Community Health, MDA and every health department where WNV was detected statewide.

## **Eastern Equine Encephalitis Surveillance**

MDA staff and Livingston County Health Department officials met to develop an Eastern Equine Encephalitis

## PLANT INDUSTRY SECTION

### Fruit and Vegetable Inspection Programs

The fruit and vegetable inspection program (F&V) was initiated in 1917 by the federal government in ten of the nation's largest markets. The program provides an unbiased, third party inspection service for the produce industry worldwide. Inspections are based on USDA standards, Michigan standards, processor specification and/or industry needs. In general, the inspection program is voluntary. However, export, school lunch, government purchase, and federal diversion programs require mandatory inspections.

#### Shipping Point Inspections

Shipping point inspections verify quality and condition of produce prior to shipment. Inspections performed for the industry are a marketing tool, which assures the produce being shipped meets the grade marked on containers and bags. USDA grades are recognized worldwide and are used to determine the value of produce.

To enforce produce standards, Michigan has nineteen USDA licensed inspectors who performed 6,542 shipping point inspections for 145,588,600 pounds of produce prior to shipment, including the summer potato harvest in the Munger area generating 568 inspections for 30,013,000 pounds of potatoes.

#### Market Inspections

Michigan has eight F&V inspectors and supervisors licensed to inspect incoming market loads of produce. This produce enters Michigan from anywhere in the world. Six of the above market inspectors are licensed to inspect all fruits and vegetables; the other two have a restricted license limiting the commodities they are allowed to inspect. In FY 2002, MDA conducted 1,082 market inspections for 18,122,389 pounds of produce.

#### Process Inspections

Twenty-three inspectors using USDA standards or processor specifications performed 6,592 process inspections. Temporary seasonal inspectors received on site training by experienced inspectors and classroom training and testing when possible. USDA requires that inspectors be licensed on each commodity prior to conducting independent inspections. In FY 2002, 7,850

process inspections were conducted on 230,738,828 pounds of apples, blueberries, red tart cherries, grapes and peppers destined for processing in Michigan, Canada, Pennsylvania, and New York.

Michigan maintains the largest concentration of apple producers in the United States. Further, Michigan is the largest producer of tart cherries in the world, and leads the nation in blueberry production. Unfortunately, the weather dealt Michigan tart cherry farmers a devastating blow this year with 98% loss of the crop, the largest loss in the recorded history of the industry. Additionally, due to severe weather, the apple harvest was the lowest recorded in more than a quarter century, with 25 to 50% loss for the 2002 statewide harvest.

Process grape inspection completed its third year using the clients' computerized inspection process. Upon arrival at the processor, the grapes were inspected for quality and sugar content. The inspection data was entered into the processor's computer, which generates copies of certificates. The data was uploaded into the processor's main office in New York. Michigan, New York, Pennsylvania, and Washington use the new electronic inspection program on grapes harvested.

For the second year in a row, process grape growers experienced a major crop failure with production down considerably due to adverse weather conditions. Nationwide Michigan is ranked fourth in the grape juice industry. Overall, Michigan supports over 12,000 acres of grapes.

#### Controlled Atmosphere Storage Licensing Program

In calendar year 2002, controlled atmosphere storage operators requested inspections on 117 rooms containing 75,532,000 pounds of apples. MDA conducted inspections on 105 rooms that met the requirement of Act 228, as amended, for 27 controlled atmosphere storage operators. Five controlled atmosphere storage rooms failed to meet requirements of the act and seven rooms were never closed.

#### Export Inspections

Phytosanitary inspections were conducted on 95 exports this year, consisting of 2,884,850 pounds of apples, dry edible beans and blueberries. Most importing countries limit the amount of insects and diseases allowed on incoming produce. Certificates were issued for the following countries: Columbia, Costa Rica, Dominican Republic, Honduras, Switzerland, United Kingdom, Venezuela and Guatemala.

## **Pesticide and Plant Pest Management Division**

### **Wholesale Potato Dealer Licensing Program**

The Wholesale Potato Dealer licensing program issued 21 licenses this fiscal year. The intent of this program is to protect Michigan potato growers in the event a wholesale potato dealer fails to pay for potatoes purchased. MDA requires wholesale potato dealers to post a bond or letter of credit as a condition of licensing. According to MDA records, no complaints were received in FY 2002.

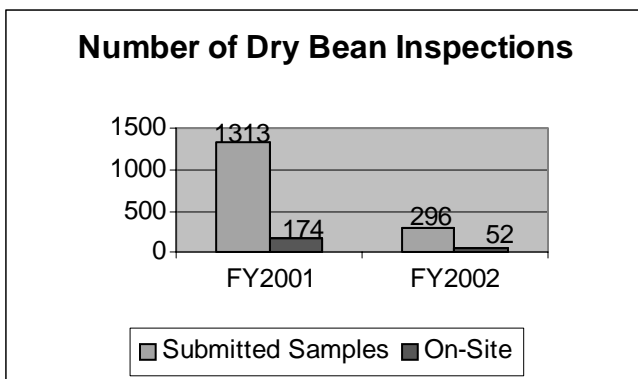
### **Seed Potato Inspection**

Seventeen Michigan farmers produced 2,580 acres of seed potatoes in 2002, of which 29,021,900 pounds were inspected by fruit and vegetable inspectors. Michigan seed farmers are shifting to raising mainly "chip" type varieties. The last two years, Michigan Seed Potato Association (MSPA) worked on a program to reduce bruising at the farms. Participating farms have implemented the recommended changes and have noted decreased bruising.

### **Dry Bean Inspection Program**

Michigan grows eight commercial classes of beans: navy, small white, black turtle, pinto, light kidney, dark red kidney, cranberry and yellow eye. Michigan leads the nation in the production of navy beans, black beans and cranberry beans. Based on the previous year's request, Michigan Bean Shippers Association (MBSA) requested MDA provide all inspection activities on dry beans, establishing a permanent inspection program.

The dry bean industry is rebounding after a devastating 2001 crop reduction. The 2002 crop quality was excellent, and 343 inspections were made on 22,896,410 pounds of dry beans. The estimated yield was 1,750 pounds per acre from a 260,000 acre crop, compared to 600 pounds per acre from a 130,000 acre crop in 2001. The previous five-year average was 1634 pounds per acre from 318,000 acres. The 2002 crop should yield 455 million pounds, where the 2001 crop was only 780,000 pounds. The five-year average is 510 million pounds.



### **Pounds for Dry Bean Inspections**

	Submitted Samples	On -Site
FY 2001	88,128,400	16,301,000
FY 2002	18,314,400	5,855,450

certifying agents, handlers, and producers who are required to register with the department. PPPM has updated the organic portion of the MDA web site throughout the year, by posting OAC meeting dates, minutes, member list, and certifying agent registration information.

### **Michigan Organic Products Program**

In FY 2002, PPPM developed the registration program. PPPM met several times in this fiscal year with the Organic Advisory Committee (OAC). The OAC consists of 11 members representing organic producers, retail food establishments, processors, input suppliers and consumers. In addition to the above members, there are several ex-officio members from Michigan State University, US Department of Agriculture, MDA and an environmental constituent who attends the meetings. The OAC is responsible for advising the director on issues that may impact the organic industry.

PPPM also applied to the National Organic Program (NOP/USDA) for approval of the new state program in FY 2002. All states wanting to have a state organic program are required to apply to NOP/USDA, and once approved, will be responsible for the enforcement of the state program and some of the federal program. NOP/USDA approval process is to insure that state programs are consistent with the national program, and to provide USDA an opportunity to review and approve any state standards which exceed the national program. Michigan law has several areas that will require amendments or justification for more restrictive requirements prior to receiving approval from NOP/USDA. Michigan requires registration of the certifying agents, handlers, and producers, which is a more restrictive requirement than the federal law. The

The application forms and letters were created for



federal law exempts producers and handlers with retail sales between \$ 0-5,000 from certification; Michigan's law does not. MDA, the Michigan organic industry, and the OAC supports the more stringent state requirements. If the more restrictive requirements in Michigan's law are not approved by NOP/USDA, Michigan must amend its law to bring it into compliance with the federal law.

The registration program will begin in FY2003. Currently this program has no dedicated funds but PPPM remains committed to supporting Michigan's organic industry to insure compliance with state and federal laws. Michigan's law is important and will provide consumer confidence in organic products and production standards in Michigan.

## Agricultural Products / Quality Assurance

### Commercial Feed Program

PPPM regulates the manufacture and distribution of commercial animal feeds. MDA also investigates reports of animal deaths or illnesses where feed may be implicated. This insures that appropriate actions to protect the food supply are taken. PPPM made 690 inspections of commercial feeds and the processes involved in their production, distribution, and storage. Inspectors contacted feed manufacturers, distributors and others an additional 949 times to follow up on previous inspections and assist companies with compliance or to investigate complaints related to feeds. Inspections of feed manufacturing practices, and the products and their labels help to assure that animal feeds are marketed fairly and are safe for their intended uses. These inspections also help assure that the meat, eggs, and dairy products obtained from production livestock are safe and wholesome.



Through its routine surveillance activities PPPM discovered 419 feed law violations, which resulted in the removal of \$125,064 worth of feed from distribution. In 2002, MDA investigated nine complaints alleging feed-related animal deaths or illnesses, problems with feed quality, or adulteration. Only one of these investigations appeared to indicate a serious violation had occurred. That case involved the improper mixing of a pesticide in a wild

bird feed product to use as bait to control pests in a retail establishment. Some of this adulterated feed was unknowingly sold to a customer, resulting in the loss of some small wild animals. The case was referred to PPPM's Pesticide Section for further investigation.

The laboratory resumed limited testing of livestock feed and pet food in 2002 following a lengthy period of renovation. Some drug testing of medicated feeds was done under a contract with the Ohio Department of Agriculture laboratory. The renovations have now been completed and routine testing will resume in the late fall and winter of 2002.

MDA tested 363 samples of livestock feed in 2002 with an overall violation rate of 29%. Seventy-three of the 288 samples (25%) of non-medicated feeds failed to meet one or more nutrient guarantees. Drug level violations were found in 34 of the 75 medicated feeds sampled (45%). These rates may be attributable to the lengthy absence of MDA's feed testing capabilities. It is hoped that the recent resumption of this service will result in improved compliance rates in the future.

Sample results for the products of another segment of the feed industry showed a much higher capacity to meet labeled nutrient guarantees. Forty-one dog and cat food samples were tested, with only one sample failing to meet a guarantee for one of its nutrients.

Wild bird feed samples were analyzed by the MDA Laboratory Division's seed section. MDA sampled and tested 240 wild bird feed products in 2002. These products were examined for the presence of noxious weed seed, with violations found in approximately 14.5% of the samples. For the first time, the lab was also being asked to verify the accuracy of ingredient declarations on these products. Approximately 8% of the samples were misbranded due to either undeclared components or because claimed ingredients were not present. Another 1.5% of the samples tested was violative for both reasons.

### Medicated Feeds



Therapeutic and production drugs are commonly administered to livestock through their feeds. Therefore, MDA monitors the manufacturers of medicated feed products closely for compliance with regulations designed to prevent unsafe drug residues in human food. PPPM conducted 153 inspections at the 142 feed mills in the state that manufacture medicated feeds, including seven FDA-licensed establishments. The purpose of these inspections is to determine a firm's level of compliance with federal Good Manufacturing Practices regulations for medicated

## **Pesticide and Plant Pest Management Division**

feeds. Approximately 40% of these firms were found with some minor deficiencies in meeting their requirements. As a result of MDA's inspection activities, enforcement action was initiated against serious and repeat violators. These actions included seven warning letters pertaining to good manufacturing requirements for medicated feed. Violations addressed in these warning notices included the use of drugs in unapproved combinations, labeling and recordkeeping deficiencies, and inadequate procedures to prevent cross-contamination of non-medicated feeds.

### **“Mad Cow Disease” Prevention**

Technically known as Bovine Spongiform Encephalopathy, or BSE, Mad Cow Disease is a progressive degenerative brain disease of cattle that is 100% fatal. At the present time, confirmation of the presence of BSE is possible only following an animal's death. BSE has now been confirmed in 22 countries worldwide. Today, BSE is presumed to have a connection with a variant of Creutzfeldt-Jakob disease (v-CJD), the human form of the disease, which causes dementia and death. As of June 2002 the CDC reports 124 cases of vCJD had been identified in the United Kingdom, six cases in France, and one each in Ireland, Italy and the United States. The case-patients from Ireland and the United States had each lived in the United Kingdom for more than five years in the United Kingdom's BSE epidemic. Victims may have been infected 10 years or more before symptoms appeared. BSE has never been detected in the United States.

The Food and Drug Administration (FDA) issued a regulation in 1997 prohibiting most mammalian protein products from being used as or in the feed of ruminant animals (e.g. cattle, sheep, goats, deer, elk, bison, and buffalo). The purpose of this regulation is to prevent the establishment and amplification of BSE in the United States through feed, and thereby minimize any risk to animals and humans. The regulation addresses the handling and use of any feed ingredient that meets the definition of so-called “prohibited materials” so that contamination of feeds intended for ruminant animals can be avoided.

PPPM inspectors have been inspecting feed manufacturing facilities throughout the state since 1998. Thus far, all of the state's renderers and livestock feed manufacturing facilities have been inspected at least once

with 98.5% of those firms in compliance with the regulation. In 2002, 272 BSE inspections were performed at 268 facilities. MDA continues to inspect all firms on a regular basis to assure continued compliance.

### **Chronic Wasting Disease**

Due to growing concerns about Chronic Wasting Disease (CWD), which, like BSE, is another transmissible encephalopathy, MDA is insuring that captive cervidae managers are aware of and complying with those sections of the BSE regulations that pertain to ruminant feeders. Also, any of these operations that manufacture their own feed are subject the same provisions of the BSE rule that apply to commercial feed mills. MDA inspectors are scheduled to begin conducting compliance inspections in FY2003.



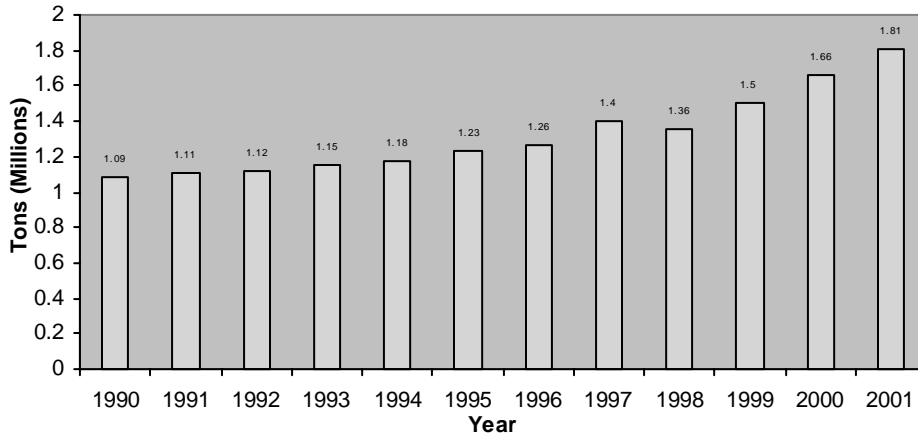
### **Annual Feed Contaminant Survey**

A partnership with FDA that enables MDA to survey animal feeds for pesticide residues was expanded in FY 2000 to include mycotoxins. This partnership is in the sixth consecutive year. The information obtained is useful in determining if additional measures are needed to prevent harmful residues in human food. This year, eighteen samples were tested for pesticide residues and nine were tested for mycotoxin contamination. The survey once again indicated that these feeds were well below FDA guidance levels.

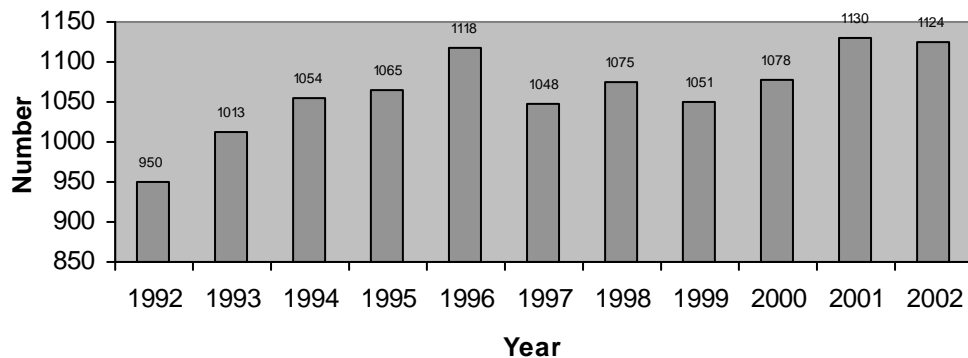
### **Feed Manufacturing and Distribution Statistics**

The total amount of feeds manufactured and distributed in Michigan increased to a twelve-year high of 1.81 million tons this past year, up from 1.66 million tons the previous year. The following graph demonstrates the general increase in commercial feeds and feed ingredients manufactured or distributed in Michigan over the past 12 years.



**Feed Manufactured and Distributed**

In 2002, MDA licensed 1,124 feed manufacturers and distributors, a decrease of six from the previous year.

**Commercial Feed Licenses Issued**

## Animal Remedies

Modern animal husbandry practices often demand the use of drugs and vaccines to prevent or treat diseases. These diseases can harm herd health and cause decreases in production. Unhealthy animals can also increase the risk of food-borne disease in humans. Likewise, a wide variety of drugs and vaccines are used extensively by homeowners in the care of their pets. The purpose of the MDA Animal Remedy Program is to provide assurance that these drugs and vaccines are safe, properly labeled, and effective for their intended uses.

MDA issued 2,406 animal remedy product licenses to 111 companies in the license year that ended June 30, 2002. There were eight companies that declined to renew 35 product licenses they had held. So far, 1,478 product licenses have been issued to 120 companies approximately nine months through the license year that began in July 2002.

Plant Industry inspectors made a total of 138 inspections checking for unlicensed or misbranded remedies, reporting 111 violations and removing \$252,400 worth of violative products from sale, more than \$180,000 over the previous year's total.

**Remedy Licenses**

## **Pesticide and Plant Pest Management Division**

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### **Elevator and Feed Mill Sanitation**



Under the Grain Elevator Sanitation Program, inspectors help to assure that conditions, which can have a detrimental impact on the safety of Michigan's food supply are eliminated. In doing so, they help to prevent costly economic losses of grain and animal feeds to pests and other forms of environmental or chemical contamination.

In FY 2002, PPPM made a total of 582 inspections to verify compliance with sanitation requirements in 371 of the 561 grain elevators and feed mills MDA regulates. Through these inspections, MDA helped to protect the wholesomeness of nearly 146 million bushels of grain and dry edible beans valued at \$761 million.

In order to effect improved compliance, enforcement efforts included the issuance of five warning letters and one informal hearing for repeated inspection failures and failure to correct unsanitary conditions in a timely manner.

### **Fertilizer and Liming Program**

The fertilizer and liming program regulates over 600 manufacturers and distributors of over 1.35 million tons of fertilizer, soil conditioners, and liming materials for both farm and non-farm use. Michigan farmers and residents of the state rely on this quality assurance and consumer protection program to maximize yields and maintain a profitable farm operation. In addition, millions of state residents depend on this program to protect them from fraud when purchasing fertilizer for home and garden use.

#### **Registration/Licensing**

Each year, PPPM conducts numerous manufacturing and marketplace inspections and label reviews. The electronic reporting system used by staff aids this process by providing easy access to current registration data, uniform reports, and tracking capabilities for unregistered and misbranded fertilizer products sold in Michigan. This year, 357 notices were written for fertilizer and liming materials found to be in violation of the Fertilizer Act. Because

fertilizer is the most widely used agrichemical, is it essential to provide customers and industry with a high level of regulatory assurance.

#### **Sampling**

After two years of limited fertilizer sampling due to laboratory renovations, the renovation was completed in March of 2002, allowing PPPM to conduct its regular sampling schedule. A wide variety of fertilizers were sampled: dry and liquid manufactured products, dry and liquid custom blends, and compost. Each sample was analyzed for total nitrogen, available phosphorus, and soluble potash (N-P-K). Sample analysis results were compared to the guaranteed analysis on the product label to verify that the fertilizer met label guarantees.

Statewide, PPPM staff collected 750 samples, resulting in 133 violations. This represents a violation rate of 18%. PPPM sent notices to firms with violative sample results and worked with these firms to review their blending/manufacturing procedures. Fertilizer samples provide relevant information about industry operations and help to make sound enforcement decisions that will insure a wholesome food supply.

#### **MDA Internet**

Fertilizer and liming program information was added to the MDA Internet site in October of 2002. PPPM staff, industry, and the general public can now go online to learn more about the agricultural products programs and download license and registration applications, laws, regulations, anhydrous ammonia safety information, and other program information. Online program information provides a unique outreach opportunity for PPPM to communicate to its internal and external customers.

#### **Anhydrous Ammonia**

Anhydrous ammonia is one of the key ingredients in the illegal production of methamphetamine. The wrongful use of anhydrous ammonia is of great concern to agriculture since it is widely used as a low-cost form of agricultural fertilizer. In Michigan over 75 locations supply approximately 140,000 tons of anhydrous ammonia for agricultural use.

In 2002, MDA continued its partnership with state agencies and stakeholders in order to advise agricultural dealers and farmers on helping to deter illicit use of anhydrous ammonia while protecting its safe, intended use. Projects included presentations, press conferences, creating and updating Internet site information, and distributing bumper stickers, brochures, and tabletop displays to agricultural related groups.

A toll-free tip line for reporting the manufacturing, sale, and use of methamphetamine is available. Individuals can call 1-866-METH-TIP to report suspected manufacturing activities of this illegal drug. The Michigan State Police also have a methamphetamine website available <http://www.msp.state.mi.us/division/cid/meth/meth.htm>.

## Fertilizer Product Information

	1998	1999	2000	2001	2002
Fertilizer Licenses	411	588	391	454	475
Specialty Products Registered	3,347	3,351	2,900	3,153	3,346
Liming Materials Licenses	93	83	75	88	84
* Fertilizer Distributed (tons)	1,421,049	1,480,492	1,396,429	1,355,255	1,346,713

\* Period is July 1 of previous year to June 30 of current year

## Bulk Storage Program

The bulk storage program serves to assure the residents of Michigan that they and the environment are protected from any possible ground contamination due to the storage of agricultural chemicals. Similar bulk pesticide and bulk fertilizer protocols allow PPPM staff to conduct both bulk fertilizer and bulk pesticide inspections in one visit and on one inspection report for facilities with both types of storage.

### Inspections and Enforcement

PPPM inspected 230 registered fertilizer and pesticide bulk storage facilities this year. Each commercial facility is inspected annually and required to register the site and update information on an annual basis with MDA. Accurate and complete bulk storage application information is essential for emergency and discharge response activities, product and site identification, and groundwater monitoring. PPPM staff also conducts consultations with firms in the initial stages of bulk storage construction. Site visits are arranged with firms to discuss and provide site planning, containment, and recordkeeping assistance.

In fiscal year 2002, the deadline passed for bulk storage facilities to be in compliance with all parts of Regulations 640 and 641. The first firms subject to enforcement action by PPPM were ones with structural deficiencies. Firms with structural deficiencies were missing and/or had the wrong size secondary or operational area containment. In FY 2002, warning letters were issued to 93 firms with structural deficiencies related to their bulk storage operations. These letters required a 20-day written

response to MDA. Further enforcement actions of "cease and desist prohibited conduct" letters, informal hearings, and compliance agreements are underway to bring 100% of all operating bulk storage facilities into structural compliance.

### Bioterrorism and Biosecurity

Michigan has placed emphasis on the safety and identification of bulk pesticide and fertilizer products to help insure agrichemicals are used for their intended beneficial purpose. The Michigan bulk storage regulations require facilities in the state to provide reasonable protection of storage containers by use of fencing, lighting, and/or locks. Storage containers must be properly labeled with the EPA registered label/guaranteed analysis and capacity.

### Outreach

Bulk storage program information was added to the MDA Internet site in 2002. The Internet site allows MDA staff, industry, and the general public an opportunity to download regulations, registration applications, checklists, and learn more about the program. Other outreach activities in 2002 included developing newsletters and press releases, speaking to industry groups, and offering on-site guidance to bulk storage facilities.

## On-Farm Fertilizer Bulk Storage

In 2001, MDA provided cost-share and technical support to assist 21 farms throughout Michigan to construct secondary containment facilities around already existing on farm bulk liquid fertilizer tanks. These on-farm

## Pesticide and Plant Pest Management Division

secondary containment demonstration sites followed the containment specifications in proposed Regulation No. 642: Farm Bulk Liquid Fertilizer Storage. The demonstration sites were used in 2002 for educational purposes to illustrate a variety of fertilizer containment operations for sound on-farm storage.

The Michigan Commission of Agriculture gave approval in 2002 for MDA to move forward with proposed Regulation 642: On-Farm Fertilizer Bulk Storage. This regulation establishes a statewide standard for the storage and handling of liquid fertilizer on the farm. Similar rules have been in place since October 1999 for commercial facilities. In 1997, MDA and the Michigan Farm Bureau organized a development committee of agency, university, and producer representatives to look at on-farm bulk fertilizer storage and further define the current working draft regulation. This development committee reconvened in 2002 and met twice to review the proposed amendments. Two public meetings were held in 2002 and the rule is on track to become effective in Spring of 2003. Uniform standards for both the commercial and private sectors of Michigan agriculture will help insure safe product storage and the protection of surface and groundwater.

### Seed Program

The objective of the seed program is to insure that the seed purchased by Michigan growers and homeowners for planting purposes is of good quality and meets standards established in the Michigan Seed Law. The law includes minimum label information and standards for germination, purity, and freedom from noxious weeds. Through the seed program, MDA also provides oversight of seed certification activities that insure the genetic purity of plant varieties and other standards of quality.

Through the seed program, MDA also assists USDA in assuring that seed companies comply with various federal seed requirements. It participates in the enforcement of the Federal Seed Act by providing samples and documentation for seed shipped in interstate commerce. MDA also provides samples of selected seed kinds to the USDA, which verifies varietal claims.

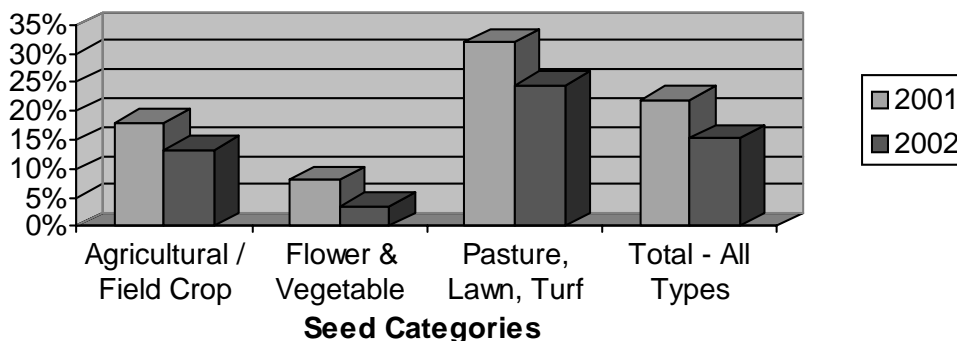
The seed program assists more than 400 seed labelers who process and distribute approximately 170,000 tons of agricultural and non-agricultural seed annually in Michigan. Approximately 52,000 farmers who produce more than \$1 billion worth of food and feed annually also benefit from this quality assurance program. In addition, state residents depend on this program to insure that the seed they purchase for lawn and garden use is of reliable quality.

### Regulatory Activities

MDA conducts routine inspections that often include the sampling of seed products to determine if they meet required standards and are labeled truthfully. These inspections allow for the interception and removal of violative seed products from the channels of trade before they reach Michigan farmers and homeowners. Inspectors also issued 408 violation notices and removed over \$1.1 million worth of violative seed products from the channels of trade in FY 2002. Warning letters were sent to 3 firms for seed violations.

In FY 2002, MDA sampled and tested 1,248 seed samples, including approximately 349 lawn/turf and mixed pasture seed, 140 flower and vegetable seed, and 759 field or agricultural seed. The overall violation rate fell from 22% last year to 15.4% in 2002.

#### Seed Sample Violation Rates





## Rhizomania

MDA established a quarantine in 1992 to delay the introduction of beet necrotic yellow vein virus (BNYVV), a serious disease of sugar beets commonly known as Rhizomania. The disease was confirmed in several locations across Michigan's sugar beet growing area in the summer of 2002. Before BNYVV was detected, 87 tests were performed on dry beans in 2002 in support of the Rhizomania Quarantine's restriction on adhering soil. All samples examined were in compliance.

When MDA established the Rhizomania Quarantine, the disease was causing serious problems with the sugar beet crops of several western states. The quarantine restricted the importation of propagative plant material and seed from susceptible species as well as soil from infested areas. This was important because Michigan dry bean growers have relied heavily on bacterial blight-resistant bean seed from some of those same western states in order to produce healthy, strong-yielding crops here.

Michigan was the last of the major sugar beet producing states to detect BNYVV. The quarantine bought Michigan growers more than 10 years of freedom from the disease. In that time, plant breeders developed resistant varieties that are now available to growers.

## Seed Count

Many seed companies place information on their product labels that is not required by the seed law or regulations. Additional information that appears on agricultural seed labels, such as the number of seeds per pound of product or per bag, is intended to assist farmers in determining the correct amount of seed needed to achieve desired planting densities. In FY 2002, MDA tested 274 of the agricultural crop seed samples collected to determine the accuracy of these seed count claims. Seed count claims that are sufficiently inaccurate may cause the seed to be misbranded under Michigan's seed law. Through this testing effort, 12 (4.3%) products were found with seed counts that failed to meet their claims within recognized tolerances, and violation notices were issued to advise the labelers of the discrepancies.

## Seed Certification

Another function of the seed program is to provide oversight for seed certification activities. The Michigan Crop Improvement Association, which is designated through regulation as the state's official seed certifying agency, provides a system for bringing high quality seed from



**Michigan Crop  
improvement association**

outstanding field crop varieties to farmers and seedsmen. The certification concept is based on varietal purity, which is comparable to pedigrees in animals. It represents seed with the genetic potential to produce high crop yields and other desirable characteristics.

The seed program also oversees the certification of seed potatoes. This activity is conducted by the Michigan Seed Potato Association and is aimed at maintaining adherence to genetic purity and mechanical standards in seed stocks for both domestic and international use.

## Plant Pest Nursery Program

In the 2002 field season, PPPM staff inspected over 15,000 acres of nursery stock and perennials in support of an industry with estimated annual sales exceeding \$710 million. Nursery inspections facilitate the sale of plant materials, such as hardy perennials, trees, shrubs, herbaceous perennials, small fruit plants and hardy bulbs. Michigan nursery growers produce stock for sale within the state and also ship to over 30 states and to many foreign markets. Through the inspection process, MDA insures that plant materials entering market channels are free of pests and diseases, and meet requirements for viability, trueness to varietal name, and quality standards, such as those prescribed by the American Nursery and Landscape Association. Besides inspecting for pests and diseases, MDA field staff also makes sure that production areas are free from weeds. For those plants destined for out of state markets, the commodity must meet the phytosanitary requirements of the receiving state.

Through the nursery program, MDA conducted annual field inspections at the state's 1,985 licensed growers of nursery stock and perennial plants. In addition to the annual inspection, other specialized inspections may be required to facilitate movement of plants into the market stream; especially where quarantine pests may be present. Of primary importance are four major quarantine-significant pests: gypsy moth, Japanese beetle, pine shoot beetle and black stem rust. All counties in Michigan are included in the Federal Gypsy Moth Quarantine. All of the Lower Peninsula and 7 out of 15 counties in the Upper Peninsula are now regulated under the Federal Pine Shoot Beetle Quarantine. Japanese beetle is the focus of several external state quarantines as well as the National Japanese Beetle Harmonization Plan. To certify plant materials for shipment outside the gypsy moth regulated counties, MDA inspectors assure freedom from this pest through an egg mass survey plus the required annual inspection. In areas of high gypsy moth populations, MDA also conducts additional checks in the spring for the presence of larvae that may be blown in from surrounding

## Pesticide and Plant Pest Management Division

areas. The black stem rust quarantine applies to barberry and related species. Only approved resistant varieties may be sold.

In 2002, no incidences occurred involving gypsy moth egg masses on Michigan-grown nursery stock and Christmas trees. This past year, PPPM placed increased emphasis on educational efforts regarding the issue of gypsy moth egg masses, especially for the Christmas tree industry. As in 2001, PPPM emphasized loading yard inspections in the Christmas tree shipping season to prevent interstate shipment of this regulated pest and thus facilitate interstate trade. The certification of nursery stock and Christmas trees complying with the Federal Gypsy Moth Quarantine continues to be a major challenge for MDA and the nursery and Christmas tree industries in Michigan.

### Nursery Inspection and Licensing Facts

General Nursery Grower Licenses	1,520
Plant Grower Licenses	465
Total # of Growers Licensed	1,985
Nursery Stock Dealer Licenses	5,483
Plant Dealer Licenses	828
Total # of Dealers Licensed	6,311
Total Licenses Issued	8,296
Acres of Field Grown Stock Inspected	11,055
Acres of Perennial Plants Inspected	1,872
Acres of Native Trees Inspected	293
Acres of Container Stock Inspected	1,306
Acres of Scionwood Inspected	486
Acres of Seedlings and Transplants Inspected	160
Total # of Acres Inspected	15,172

### Interstate Certification

Through the nursery program, MDA certifies plant material for interstate shipment. PPPM field staff is responsible for ensuring that plant materials meet the quarantine requirements of the receiving states. Where appropriate, MDA enters into compliance agreements with the growers and shippers whereby a systems approach is used to facilitate movement of the commodity. This past year, a total of 218 compliance agreements were issued and monitored by MDA. With the removal of federal certification from the nursery license, MDA has largely switched to issuing federal certification through a redesigned Certificate of Quarantine Compliance. In some instances, Michigan firms are authorized to imprint invoices or other shipping documents with federal and state certification.

This past season, MDA issued 283 state phytosanitary certificates for interstate shipment of commodities. These included 274 certificates for propagative items and nine certificates for hay and straw. Field staff is fully using the electronic version of the Certificate of Quarantine

Compliance. Due to its adaptability to more uses and increased accountability for commodities shipped, this certificate has largely replaced the state phytosanitary certificate for interstate shipments

### 2001 Rose Evaluation Trials

For a fifth year, PPPM, worked with Dow Gardens in Midland, Michigan and the Rose Society to conduct a rose-grow out and evaluation trials project. The project was initiated in 1997 due to concerns raised by the American Rose Society, the National Plant Board, and several states regarding the increased occurrence of rose mosaic viruses and concerns about accurate labeling. Objectives for this year's trials included checking for trueness to variety labeling, grade accuracy, and evaluating for the presence of rose mosaic viruses.

PPPM staff obtained all plants from nursery retail stores throughout the state. The plants were grown out at Dow Gardens under the care of a full-time staff horticulturist and a master gardener. A total of 125 rose plants were entered in the trials representing 25 varieties of five plants each. Plants were evaluated for presence of virus on the basis of visual observation and laboratory tests. Again, as in the past two years, extensive laboratory testing using ELISA was incorporated into the evaluation. Laboratory tests were performed for the three most common viruses encountered in the rose mosaic complex – prunus necrotic ring spot, apple mosaic and arabis mosaic viruses. Only five varieties were found to be completely free of virus. In the remaining 20 varieties, one or more plants tested positive or exhibited symptoms. Out of the 125 plants tested, apple mosaic virus was detected in 34 plants, prunus necrotic ring spot was detected in 25 plants and arabis mosaic virus was found in five plants. This year we tested root and bud tissue at planting time in May. Results from the testing show that this process can be used to detect virus early in the season on dormant plants as well as later when the plants have matured.

PPPM met with three firms that had sold multiple varieties of infected roses in 2001 for the purpose of enforcing our rose restriction program. All three firms have tentatively agreed that they can meet the 10 percent restriction threshold for future shipments. This criterion calls for rejection of a variety when 10 percent or more of the plants are infected.

### Export Certification

Under the cooperative agreement with the USDA, commissioned PPPM staff members received training and authorization to issue federal phytosanitary certificates to facilitate trade in foreign markets. In 2002, PPPM staff issued federal phytosanitary certificates to facilitate the export of Michigan commodities. These commodities



were shipped to nearly 50 countries worldwide. The vast majority went to our trading partners in Canada and Mexico, as well as to Europe and South America. Over 2,060 federal certificates were issued covering the following commodities: beans and grains, 908 shipments; fruits and vegetables, 104 shipments; logs and lumber, 267 shipments; and propagative commodities (plants, cuttings, seeds and bulbs), 783 shipments.

This was the sixth year that MDA participated in a certification program to facilitate the movement of apples to Brazil. This was a cooperative effort between MDA, the USDA, Michigan State University, and the Michigan Apple Committee. The acceptance of this protocol by Brazil has opened another lucrative market for Michigan apples, bringing in additional income for apple producers. Due to the soundness of the procedures, Arizona officials also use this protocol for shipments entering that state.

### U.S./Canada Greenhouse Certification Program

A total of three Michigan firms are enrolled in the U.S./Canada Greenhouse Certification Program. Qualified greenhouse growers may ship certain types of plants to Canada under a special sticker certification. Under this program, firms that produce herbaceous perennials, bedding plants, annuals, cacti and some aquatic plants may qualify for use of a special export certificate for shipments going to Canada. Woody ornamentals are excluded. To qualify, the firm must have a documented pest management program, grow all the plants in a secure screened greenhouse and maintain records of all shipments. MDA's role is to monitor the firm for compliance with the program. Firms that qualify are issued special serially numbered sticker certificates for attachment to shipping documents. This past shipping season an estimated 170 shipments were made by the three firms enrolled in the program.

### Christmas Tree Certification

In 2002, PPPM field staff inspected 15,547 acres of Christmas trees for compliance with federal gypsy moth and pine shoot beetle quarantines. The annual wholesale and retail sales of Christmas trees by Michigan producers is valued at over \$38 million, representing nearly 3.5 million trees. Of the 831 fields inspected, 92 percent were certified for shipment outside the state. Restrictions were up this year due to increased incidence of gypsy moth found in hardwood trees at the perimeter of the fields. Approximately 80% of those fields were due to presence of gypsy moth egg masses, with the remainder for presence of pine shoot beetle.

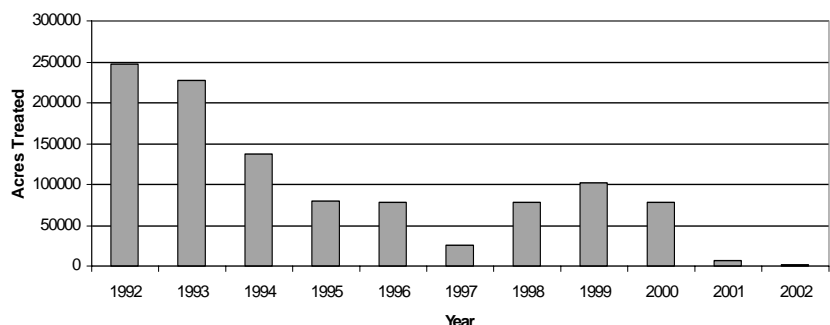
This past year marked the sixth year of participation in the Pine Shoot Beetle Compliance Management Program for certifying pine Christmas trees. This year, 11 firms enrolled 55 fields in the PSB Compliance Management Program. Out of these fields, a total of 48 passed after meeting the program requirements. The remaining fields either failed to meet requirements or were removed from the program voluntarily by the grower.

## Gypsy Moth Program

From the perspective of landowner nuisance, impact on wood fiber production and interstate movement of Christmas trees and nursery stock, gypsy moth continues to be among the most serious plant pests in Michigan. PPPM provides a four-prong approach to gypsy moth control through the Gypsy Moth Cooperative Suppression program, education project, Slow the Spread program, and biological control.

### Cooperative Gypsy Moth Suppression Program

There are three primary goals of the Michigan Cooperative Gypsy Moth Suppression Program: protection of trees for aesthetics and wood fiber production; reduction of larval populations in residential and recreational areas so citizens can enjoy Michigan's summer; and reduction in the misuse of pesticides for management of gypsy moth.



## Pesticide and Plant Pest Management Division

PPPM administers the Gypsy Moth Cooperative Suppression program, provides coordination and oversight, and acts as the pass-through agent for USDA Forest Service funds to Michigan counties. The 2002 treatment area consisted of 2,271 acres in Lower Peninsula counties. All treatments were performed by means of aerial applications of the biological insecticide, *Bacillus thuringiensis* ssp. *kurstaki* (Btk) using fixed wing aircraft.

### Education Project

Unique to Michigan, a legislative grant through MDA is provided to Michigan State University (MSU) to conduct a statewide gypsy moth education program. This grant has been used to develop a gypsy moth educational strategy that provides information and educational opportunities to Michigan citizens.

### Slow-the-Spread (STS) Project

Gypsy moth is now established throughout Michigan and continues its westward and southward expansion. Though stopping the spread of gypsy moth is not practical, slowing the rate of spread is possible. Toward this end, the USDA Forest Service, in cooperation with all states along the leading edge of the gypsy moth infestation (North Carolina, Virginia, West Virginia, Ohio, Indiana, Illinois, Wisconsin, and Michigan), have been employing practical trapping and treatment processes to slow the spread of gypsy moth. Over the entire area, the program has been able to slow the spread due to human accelerated gypsy moth advancement from 13 miles per year to approximately 3 miles per year. Although the front of gypsy moth advance westward has passed through Michigan and into Wisconsin, trapping data from behind the line of advance is still important. Subsequently, Slow-the-Spread trapping continued in Michigan in 2002. The 2002 program involved the placement of 1,797 traps across the western Upper Peninsula and 279 traps in the southwestern Lower Peninsula.

### Biological Control

Biological control continues to be a critical element in managing gypsy moth populations. Eight species of biological control organisms from Europe and Asia have been released to control specific life stages of gypsy moth. Each of these biological control species has been carefully selected for managing gypsy moth.

The fungal pathogen, *Entomophaga maimaiga*, has been established throughout the infested area and has provided significant control, especially under warm, damp conditions. This pathogen was not very active in 1999 and 2000, but in 2001 *E. maimaiga* and the nucleopolyhedrosis virus hit the population hard. As a result we continue to see limited defoliation and greatly

reduced egg mass densities all across the Lower Peninsula. Clearly, the biological control program is having an impact on gypsy moth in Michigan.

## Emerald Ash Borer Eradication

In the past couple of years, widespread decline and loss of ash trees has occurred in southeast Michigan. Specialists at Michigan State University (MSU) and the Michigan Department of Agriculture (MDA) first attributed much of the problem to a combination of disease, drought, and poor soils. However, in June 2002, a new insect that bores into ash trees was also found associated with these trees. The non-native exotic pest, identified by the US Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS) as the Emerald Ash Borer (EAB), *Agilus planipennis*, belongs to a group of insects known as metallic wood-boring beetles, so named because of their metallic color. Scientific literature indicates it is native to parts of Asia including northern China, Japan, Korea, and Mongolia.

Michigan quickly established an active Emerald Ash Borer Task Force to work toward controlling and eradicating this new exotic pest and minimize its damage. Members include MDA, the Michigan Department of Natural Resources, Michigan State University, USDA-APHIS, and USDA Forest Service, in cooperation with local units of government and various industry groups, associations, and universities.

An initial delimiting survey in southeast Michigan in July 2002 identified five counties as infested with EAB and Monroe County was added in September 2002 for a total of six counties. These counties include Livingston, Macomb, Monroe, Oakland, Washtenaw, and Wayne.

To control and prevent its further spread, MDA quarantined the affected counties prohibiting the transport of ash trees and woody material, including firewood, from the quarantined counties unless chipped to one-inch in diameter or less. In addition, forest health monitoring surveys within the infested zone were conducted to identify the geographic scope of EAB and its impact on the ash resource.

By September 2002, the EAB Task Force initiated several preliminary programs to lay the groundwork for the long-term response and eradication efforts. These initial efforts included:

### Survey

A more extensive delimiting survey was performed in September and October 2002 to better determine the geographic range of the EAB infestation in southeast Michigan. Over 3,000 sites were examined over the five-

week period. The survey was vital to the other components of the EAB management plan: quarantine enforcement, education and outreach efforts, research, and sanitation.

### Communications and Outreach

The first step in developing an effective communications and outreach program was the establishment of an Interagency Communications Committee. This oversight group directed various communications endeavors, such as the establishment of an EAB web site within the MDA's web structure, development of several informational pieces, including direct mailings to impacted residents, brochures, posters, fact sheets, and frequently asked questions.

### Regulatory Activity

In addition to establishing a quarantine, during the fall and into the winter of 2002, regulatory efforts focused primarily on identification of "high risk" businesses such as firewood dealers, land clearing companies, nursery dealers, municipalities, landscapers, and wood product manufacturers. Inspections and certifications were performed using existing MDA staff and resources. As a result of these initial efforts, an eradication budget was assembled. This budget, along with initial research and survey information, provided the basis for an emergency request for funds from the USDA to manage this pest.

## Plant Pest Survey Program

### Wood-boring and Bark Beetle Survey

Exotic species of wood-boring and bark beetles have been accidentally introduced into the Midwest via trade goods from China and other Asian countries. The Asian long-horned beetle (ALB) infestation in Chicago is an example of an introduced species colonizing in hardwood trees and damage levels that occur. Other exotic species have been found in wooden crating at several Michigan businesses that receive Asian trade goods. In order to minimize the possibility of establishing a population of exotic wood boring pests in Michigan, MDA surveyed 23 high-risk warehouses located in nine counties, solid-wood packing material, and the environs 75 yards around the warehouse for exotic wood boring pests using the protocol provided by USDA-APHIS. As part of these inspections, field staff were instructed to provide ALB and other wood boring/bark beetle outreach information and obtain information regarding the receipt of solid-wood packing materials from China and other countries, their handling, distribution, and disposal. In addition, 286 other habitats, such as nursery fields, retail outlets, etc. were also surveyed for exotic wood boring pests.

### Chrysanthemum White Rust (*Puccinia horiana*)

Chrysanthemum White Rust, *Puccinia horiana*, is a serious disease of chrysanthemum and is known to attack twelve species of chrysanthemum. The damage caused by this disease can be devastating to the Michigan greenhouse and nursery industry if this disease becomes established in Michigan. Recent interceptions of what is suspected to be chrysanthemum white rust in shipments from Canada are of great concern to the State of Michigan. An enhanced level of surveillance at the ports of entry into Michigan from Canada will reduce or alleviate the possible introduction and/or establishment of Chrysanthemum White Rust in Michigan.

MDA conducted inspections of greenhouses receiving chrysanthemums from Canada, based on U.S. Customs and/or USDA-APHIS-PPQ documents using the protocol provided by USDA-APHIS. A total of 228 sites located in 36 counties were inspected by the MDA staff for Chrysanthemum White Rust and all of the sites surveyed were found to be negative.

### Daylily Rust (*Puccinia hemerocallis*)

As the Michigan growers and dealers receive significant quantities of daylily from the southeastern states of the U.S. where daylily rust is known to occur, a detection survey was done at 392 locations in 55 counties and daylily rust was found in 6 locations.

A new disease on daylilies, *Hemerocallis* spp., daylily rust, was found on daylilies in a nursery in southeastern U.S. in the summer of 2000. The rust was initially identified as

*Puccinia hemerocallidis*, since then there have been questions regarding the correct classification of the species name. Daylily rust has been reported on a variety of daylilies, and the perennial *Patrinia* is an alternate host of *Puccinia hemerocallidis*.

Daylily rust is native to Asia and was introduced into a southeastern nursery in the U.S. through plant material originating from Central America. Currently this disease has been detected in Georgia, Alabama, Florida and South Carolina. Because of its short incubation period and rapid spread and due to the importance of daylily in the interstate trade, the New Pest Advisory Group (NPAG) sponsored by the USDA believes that this rust will be a serious pest of daylily and may also threaten the alternate host *Patrinia* spp.

## **Pesticide and Plant Pest Management Division**

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### **Dogwood Anthracnose (*Discula destructiva*)**

Since the mid-1970s, dogwood (*Cornus* spp.) trees in North America have experienced increasing levels of dieback and mortality from dogwood anthracnose, a disease caused by the fungal pathogen *Discula destructiva*. Dogwood anthracnose is currently distributed in the eastern United States and along the Pacific coast, but the origin of this pest is not clear. Although it is typically considered an introduced, exotic organism, it may also be a native fungus responding to changes in the environment.

Besides being valued as ornamental trees due to their showy flowers, dogwoods are also important understory species in older-growth forests and serve as valuable food sources for mammals and birds. MDA conducted a survey of dogwood nursery stock for the presence of dogwood anthracnose. Of the 376 nursery locations inspected in 52 counties, dogwood anthracnose was detected in 6 locations.

### **Hemlock Woolly Adelgid (*Adelges tsugae*)**

A native of Japan and China, the hemlock woolly adelgid was discovered in Virginia in 1951, and has since become among the most destructive pests of eastern forests. The range of hemlock woolly adelgid in the eastern United States currently includes 15 states and extends from Georgia and South Carolina northeastward into New Hampshire. Hemlock woolly adelgid feeds exclusively on hemlock (*Tsuga* spp.), and severe infestations can kill trees in just two to four years.

Hemlocks are important pulp and structural lumber trees and are among the most cultured and cultivated conifers in the United States. Hemlock forests provide critical habitat for a variety of wildlife and support unique communities of plants, fish, mammals, and birds - several of which nest exclusively in hemlock. With no other trees capable of filling the hemlock's ecological role, the loss of these trees from the native landscape could mean the drastic reduction or loss of many of the species that rely on them.

Early detection is critical for eradication of HWA in the event of an accidental introduction in Michigan. To this end, a total of 204 locations were inspected for hemlock woolly adelgid in 43 counties statewide, and all surveys were negative. MDA also expanded its HWA Exterior Quarantine to include California, Oregon, Washington, and British Columbia, in addition to all infested counties in the eastern U.S.

### **Meadow Fleabane (*Inula britannica*)**

Meadow Fleabane was first collected in the United States in 1915 in Nassau County, New York. It was discovered in Michigan nurseries around 1990 in association with *Hosta* imported from the Netherlands. Meadow Fleabane roots and rhizomes become intertwined with those of *Hosta*, and can persist even when the *Hosta* rootstocks are washed.

Because of the popularity of *Hosta* and the large quantities of *Hosta* imported into the state, Meadow Fleabane has a high-risk of potential introductions and establishment in Michigan, where it could become a serious pest of nurseries and landscapes. Of the 385 locations inspected statewide for Meadow Fleabane, it was found in four locations, all in Ottawa County.

### **Japanese Cedar Long-Horned Beetle (*Callidiellum rufipenne*)**

Intercepted at U.S. ports of entry frequently in the past 75 years, it was believed that the Japanese cedar long-horned beetle infested only dead or dying host trees. However, this insect was recently discovered feeding on healthy arborvitae (*Thuja occidentalis*) in Connecticut and eastern red cedar (*Juniperus virginianus*) in North Carolina.

The potential for introduction of this insect into Michigan poses a threat to the state's native and cultivated cedars, junipers, and arborvitae. To determine the status of this exotic insect in Michigan, a total of 390 locations were inspected statewide and all were negative.

### **Pine Shoot Beetle (*Tomicus piniperda*)**

Since its discovery in an Ohio Christmas tree farm in 1992, the pine shoot beetle has spread aggressively throughout much of the Midwest, and currently infests all of Michigan's Lower Peninsula and the eastern half of the Upper Peninsula. A native of Europe, the pine shoot beetle is a serious pest of commercial pines, feeding on developing shoots and stunting the growth of the tree.

This year's survey included 15 funnel traps placed in Alger County in the Upper Peninsula. Two specimens were collected are currently awaiting identification by USDA.



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## **Plant Pest Permit**

In an effort to prevent the introduction of alien pests into Michigan, MDA reviews applications submitted to USDA for the importation of exotic plant pests and noxious weeds into the state. Following review of the application, MDA can deny, approve, or conditionally approve the permit.

Four-hundred nineteen permit requests for the importation of 147 potential plant pest species were reviewed from 96 individuals in FY2002. Eight requests were denied based on the potentially invasive nature of the cited organisms. These included two species of bumblebees, a cricket, the brown-lipped snail, and a noxious weed.

## **Plum Pox Virus Sampling**

Plum Pox Virus (PPV) is a serious, exotic pest of stone fruits. PPV was not known to occur in the US before it was detected in Adams County, Pennsylvania in October 1999. Due to this detection, Canada declared a quarantine on all states, prohibiting the shipment of *Prunus* nursery stock into Canada, effective November 1999. If PPV is found to be in Michigan, its impact on the \$65 million stone fruit orchard industry and the \$10 million fruit tree and nursery stock market share this state currently holds will be very significant. The 2002 PPV survey in this state was appropriately adjusted to reflect the negative PPV results from the previous 2 years. Continued surveys of the high-risk sites in the state were conducted to determine whether or not PPV was present. The Michigan survey was part of the National PPV Survey. The objectives of the PPV survey were the collection of leaf samples from high-risk sites, in accordance with the USDA field sampling protocol, then analysis of the collected leaf samples, using ELISA in accordance with the USDA laboratory protocol.

MDA collected and tested a total of 35,932 laboratory samples between the months of June and August 2002. The collection and testing of the samples were in accordance with the protocols provided by the USDA-APHIS-PPQ. Samples collected were comprised of peach, plum, apricot and nectarine leaf samples from 1,369 acres belonging to 124 growers, and located in 14 counties. All samples were negative for Plum Pox Virus.

## **Swede Midge (*Contarinia nasturtii*)**

Swede midge, *Contarinia nasturtii*, is a pest of concern and was detected in Ontario, Canada for the first time in 1996. All major cole crops, including cabbage, broccoli, and cauliflower are affected by the Swede midge. In Ontario, damage levels in affected crops ranged from 10% to 90%. Swede midge larvae cause the seedlings to become twisted from the transplanting stage onward and

a brown spot develops at the growing point. No head will be formed if the damage occurs at the button stage. The head will become twisted and asymmetrical, if the damage occurs after the formation of the head. Wounds created by the larvae leave the plant at a greater risk of disease. In Europe, there are 3 to 4 generations in a year. The life cycle in Ontario, Canada is unknown. Swede midge is not known to occur in Michigan. Considering the close vicinity of Michigan to Ontario, Canada and the amount of commercial traffic from Ontario into and through Michigan, it became necessary for MDA to inspect fields in southeast Michigan where cole crops are grown. MDA conducted 77 inspections in cole crop fields located in 6 counties in southeast Michigan. Yellow sticky traps were set in the field according to the USDA protocol. All of the traps were inspected and found negative for Swede midge. All of the records have been entered in the NAPIS database.

Swede midge is an exotic pest of major cole crops. MDA inspected 154 cole crop fields located in 6 counties. All inspections were negative for Swede midge.

## **Sudden Oak Death (*Phytophthora ramorum*)**

Sudden Oak Death (SOD) is caused by a fungal pathogen, *Phytophthora ramorum*. This pathogen has been found recently in California and Oregon for the first time, and is also known to cause dieback of rhododendrons in Europe. At the present time, SOD has been detected in ten coastal counties in California and one county in Oregon. SOD is known to infect the following six species, belonging to two families: Coast live oak, black oak, shreve oak and tanoak in Fagaceae (beech family), and California or evergreen huckleberry and *Rhododendron* spp. in Ericaceae (heath family). In oak, the infected stems develop bleeding cankers that produce reddish-brown or tar-black viscous seep. As the disease progresses, mortality is believed to eventually cause the cankers girdling the trees. In rhododendron, leaf spotting and dieback cause the damage. The Michigan nursery industry imports a large number of rhododendrons from the West Coast and the state has a high population of oak trees that MDA has a responsibility to protect. For this reason it is necessary to conduct surveys to determine if this pest can be found in Michigan. MDA inspected 359 sites and all were negative for Sudden Oak Death.

## **Plant Pathology Section Scionwood**

The Plant Pathology Section is actively involved in improving the quality of pome and stone fruit trees in Michigan. This program is established at Hilltop Nurseries, Inc., Hartford, Michigan. The nursery maintains 14,000

stone and pome fruit trees in four scionwood orchards for certification of budwood for virus-free status. This year the nursery sold less than one million certified fruit trees due to lack of grower's interest in apple trees.

### Blueberry Certification

PPPM has been conducting virus-free certification of blueberry plants to help growers obtain disease-free vigorous plants for export and planting. Under this program, PPPM tested 350,337 blueberry plants representing 23 varieties for five plant viruses and random screening was done for two additional viruses (blueberry shock and blueberry scorch) to protect growers from the introduction of emerging pathogens. In addition, a survey was conducted in nurseries and blueberry farms to determine the status of blueberry scorch and blueberry shock virus in Michigan. All the samples tested for the above two viruses were found to be negative. However, MDA detected tobacco ring spot virus in Early Blue variety in the mother block of one grower and the entire variety was destroyed to keep the infestation out of the propagation block.

### Import Permits

To facilitate introduction of foreign genetic material to improve the quality of fruit trees and landscape material, MDA authorized five permits to import 650 plants (Rose and Hydrangea species) under the post-entry quarantine program in 2002. Currently we have 16,049 plants that were imported and are under post-entry quarantine.

In 2002, USDA-APHIS in cooperation with MDA, issued 24 permits to conduct research on poplar, grasses, sugar beets, asparagus, potato, apple, tobacco, alfalfa, cucumber, soybean, wheat, bacteria, and corn in Michigan. Among these, 13 permits were issued for field trials to assess insect and disease resistance, herbicide tolerance, improved oil contents, altered carbohydrate metabolism, production of pharmaceutical protein, and lignin biosynthesis. Nine companies and universities conducted environmental release trials in seven counties.

### Dry Bean Testing

The dry bean industry is a very important component of the Michigan economy. To maintain the quality of dry bean seed and meet seed certification and export requirements, PPPM has been testing bean samples for seed borne diseases (anthracnose, common bean mosaic, virus, and common bean blight). In 2002, PPPM tested 125 samples and found three samples of certified seed and seven samples of non-certified seed infected with common bean mosaic virus. One sample of certified dry bean seed was infected with anthracnose. All dry bean samples submitted for certification were free from common bean blight. In 2002, the number of samples submitted for certification was low because growers destroyed seed fields due to adverse climatic conditions in Michigan and competition from other states.

### Seed Corn Certification

In 2002, four seed companies submitted 7,025 acres of seed corn for phytosanitary certification. PPPM inspected 127 fields submitted by four companies for bacterial, fungal, and viral diseases in 6 counties. PPPM did not detect Stewart's wilt, *Erwinia stewartii*, in any of the samples. Two of the seed corn seed fields submitted for certification had Gos' bacterial wilt and blight, *Clavibacter michiganensis* sub spp.

### Soybean Cyst Nematode (*Heterodera glycines*)

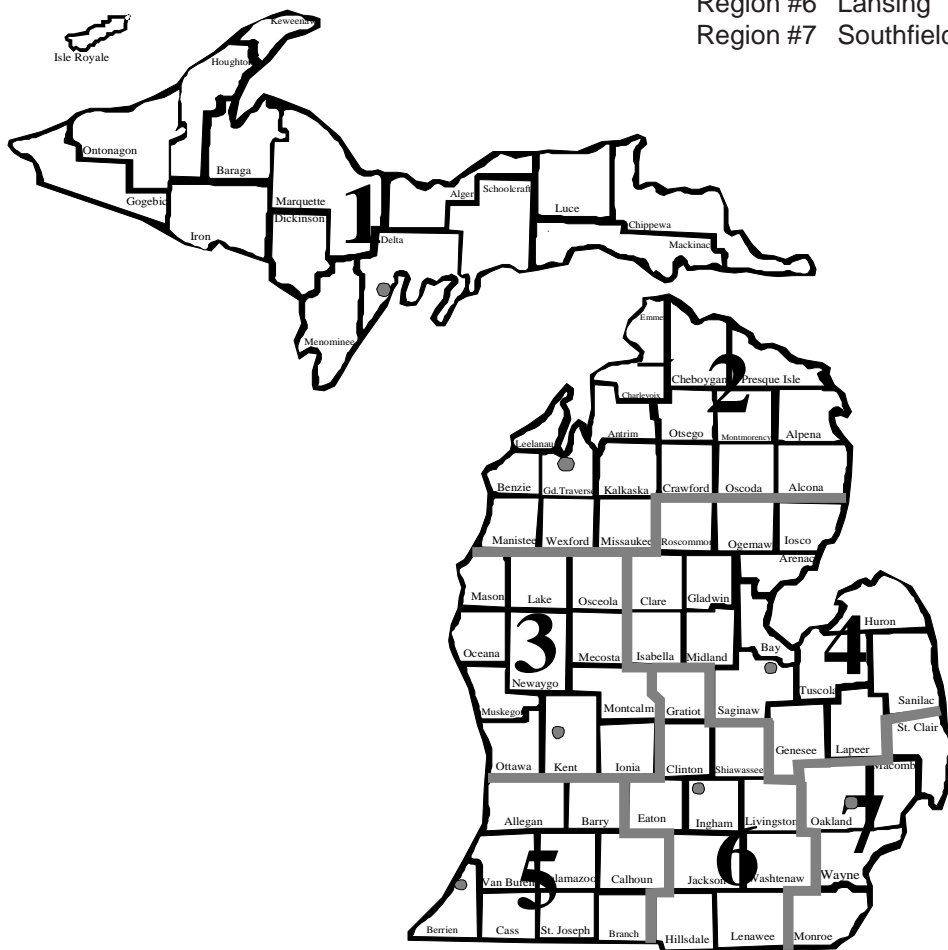
Due to the presence of soybean cyst nematode (SCN) in 31 counties in Michigan, the SCN survey was conducted to facilitate the movement of nursery stock and plant products for export. In 2002, MDA collected 146 samples from 82 nurseries in 34 counties, representing 2,019 acres. PPPM also analyzed 40 samples from seed potato fields in eight counties, representing 1,224 acres. None of the nurseries were infested with SCN and/or golden cyst nematodes.



## More information...

For more information on this report or for questions on Pesticide and Plant Pest Management Division program activities, consult the MDA website at [www.michigan.gov/mda](http://www.michigan.gov/mda), contact the division at (517) 373-1087, or contact your nearest regional office listed below.

Region #1	Escanaba	(906) 228-9998
Region #2	Traverse City	(231) 922-5210
Region #3	Grand Rapids	(616) 356-0600
Region #4	Saginaw	(989) 758-1778
Region #5	St. Joseph	(269) 428-2575
Region #6	Lansing	(517) 335-1830
Region #7	Southfield	(248) 356-1701



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